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YEAR 2000 PROGRAM AT THE DEFENSE ADVANCED RESEARCH PROJECTS AGENCY
Report Number 98-182   July 31, 1998

Office of the Inspector General
Department of Defense

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AQI 99-12-2328

Acronyms

CIO	Chief Information Officer
COTS	Commercial-Off-the-Shelf
DARPA	Defense Advanced Research Projects Agency
DMSS	DARPA Management Support System
IT	Information Technology

July 31, 1998

MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE (COMMAND,
    CONTROL, COMMUNICATIONS AND
    INTELLIGENCE)
    DIRECTOR, DEFENSE RESEARCH AND ENGINEERING
    DIRECTOR, DEFENSE ADVANCED RESEARCH
    PROJECTS AGENCY

SUBJECT: Audit Report on Year 2000 Program at the Defense Advanced Research
    Projects Agency (Report No. 98-182)

  We are providing this audit report for information and use. We considered comments on a draft of this report in preparing the final report.

  We received comments from the Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) and the Defense Advanced Research Projects Agency. Comments were responsive, conformed to the requirements of DoD Directive 7650.3, and left no unresolved issues. As a result of the comments from the Defense Advanced Research Projects Agency, we revised Recommendation 1. to agree with the alternative recommendation from Defense Advanced Research Projects Agency. Therefore, no additional comments are required.

  We appreciate the courtesies extended to the audit staff. For additional information on this report, please contact Mr. Raymond A. Spencer at (703) 604-9071 (DSN 664-9071) or Mr. Roger H. Florence at (703) 604-9067 (DSN 664-9067). See Appendix B for the report distribution. The audit team members are listed inside the back cover.

David K. Steensma
Deputy Assistant Inspector General
for Auditing

Office of the Inspector General, DoD

Report No. 98-182
(Project No. 8AB-9013)

July 31, 1998

Year 2000 Program at the Defense Advanced Research Projects Agency

Executive Summary

Introduction. This report is one of a series of reports being issued by the Inspector General, DoD, in accordance with an informal partnership with the Chief Information Officer, DoD, to monitor DoD efforts in addressing the year 2000 computing problem. Information technology systems have typically used two digits to represent the year, such as "98" representing 1998, to conserve electronic storage and reduce operating cost. With the two-digit format, however, the year 2000 is indistinguishable from 1900. As a result of the ambiguity, computers, associated systems, and application programs that use dates to calculate, compare, and sort could generate incorrect results when working with years after 1999.

Audit Objectives. Our primary audit objective was to determine whether the Defense Advanced Research Projects Agency is adequately preparing its information technology systems to resolve date-processing issues for the year 2000 computing problem. Specifically, the audit determined whether the Defense Advanced Research Projects Agency has complied with the DoD Year 2000 Management Plan. The audit also evaluated the management control program as it applies to the audit objective. DoD recognizes the year 2000 issue as a material management control weakness area in the FY 1997 Annual Statement of Assurance.

Audit Results. DARPA has properly examined its internal management information systems for year 2000 compliance; however, DARPA did not review research contracts for year 2000 considerations. As a result, DARPA cannot ensure that research projects will not have year 2000 date-processing problems.

Summary of Recommendations. We recommend that the Director, Defense Advanced Research Project Agency, review research efforts and planned system interfaces to determine if the efforts have a potential year 2000 impact and modify the appropriate contracts. In addition, we recommended that contracts be reviewed for year 2000 compliance as part of the management control program self-evaluation.

Management Comments. The Acting Deputy Assistant Secretary of Defense (Chief Information Officer, Policy and Implementation) provided comments to the draft report and concurred with the finding and recommendations. The Director, Defense Advanced Research Projects Agency, concurred with the recommendations, although he stated that reviews of information technology acquisitions were performed in accordance with guidance issued by the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence). However, the Director also stated that

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the audit report opened up new areas of the year 2000 computing problem that go beyond the intent of the Assistant Secretary's guidance in reviewing research efforts for a potential year 2000 impact. The Director agreed that research efforts should be reviewed for a year 2000 impact and has initiated a program for the reviews. See Part I for a summary of management comments and Part III for the complete text of the comments.

Audit Response. Comments of the Acting Deputy Assistant Secretary of Defense (Chief Information Officer, Policy and Implementation) and the Director, Defense Advanced Research Projects Agency, were responsive. As a result of the comments of Director, Defense Advanced Research Projects Agency, to the draft report, we revised the recommendation to review research efforts for a potential year 2000 impact.

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Part I - Audit Results

Audit Background

The year 2000 problem is the term most often used to describe the potential failure of information technology systems to process or perform date-related functions before, on, or after the turn of the century. The year 2000 problem is rooted in the way automated information systems record and compute dates. For the past several decades, systems have typically used two digits to represent the year, such as "98" representing 1998, to conserve on electronic data storage and reduce operating costs. With the two-digit format, however, the year 2000 is indistinguishable from 1900. As a result of the ambiguity, computers and associated systems and application programs that use dates to calculate, compare, and sort could generate incorrect results when working with years following 1999. Calculation of year 2000 dates is further complicated because the year 2000 is a leap year, the first century leap year since 1600, and the computer systems and applications must recognize February 29, 2000, as a valid date.

Because of the potential failure of computers throughout the Government to run or function, the General Accounting Office has designated resolution of the year 2000 problem as a high-risk program. In addition, DoD recognizes the year 2000 issue as a material management control weakness area in the FY 1997 Annual Statement of Assurance.

DoD Year 2000 Management Strategy. In his role as the DoD Chief Information Officer, the Acting Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) issued the final version of the "DoD Year 2000 Management Plan" (DoD Management Plan) in April 1997. The DoD Management Plan provides the overall DoD strategy and guidance for inventorying, prioritizing, repairing or retiring systems, and monitoring progress. The DoD Management Plan states that the DoD Chief Information Officer has overall responsibility for overseeing the DoD solution to the year 2000 problem. Also, the DoD Management Plan makes the DoD Components responsible for the five-phase year 2000 management process, including awareness, assessment, renovation, validation, and implementation actions. The Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) is updating the DoD Management Plan, which accelerates the completion dates for resolving the potential year 2000 problem.

Defense Advanced Research Projects Agency. The Defense Advanced Research Projects Agency (DARPA) was established in 1958 as the first U.S. response to the Soviet launching of Sputnik. Since that time, its primary responsibilities have been to help maintain U.S. technological superiority and to guard against unforeseen technological advances by potential adversaries. The DARPA mission is to develop imaginative, innovative and often high risk research ideas offering a significant technological impact that goes well beyond

the normal evolutionary development approach, and to pursue these ideas from the demonstration of technical feasibility through the development of prototype systems.

Audit Objectives

Our primary audit objective was to determine whether DARPA is adequately preparing its information technology systems to resolve date-processing issues for the year 2000 computing problem. Specifically, the audit determined whether DARPA has complied with the DoD Management Plan. The audit also evaluated the management control program as it applies to the audit objective. Appendix A describes the audit scope and methodology, the results of the management control program review, and prior audit coverage.

Status of the Defense Advanced Research Projects Agency Year 2000 Program

DARPA has properly examined its internal management information systems for year 2000 compliance; however, DARPA did not review research contracts for prototypes for year 2000 considerations. This condition exists because DARPA did not fully consider year 2000 implications on ongoing research efforts. As a result, DARPA cannot ensure that research projects will not have year 2000 date-processing problems.

Actions Taken to Address the Year 2000 Problem

DARPA began looking at the year 2000 problem in December 1995. In January 1996, DARPA began participating as a member of the DoD Year 2000 Work Group and formed an internal assessment team to determine the scope of the problem at DARPA. In February 1996, DARPA developed a year 2000 plan that included the following five phases: awareness, assessment, renovation, validation, and implementation.

The assessment team completed a review of all installed systems in September 1996 and found that the majority of custom-developed software, commercial-off-the-shelf (COTS) software, hardware and associated operating systems used at DARPA were year 2000 compliant. The awareness phase will continue until the year 2000.

DARPA has properly examined its management information systems for year 2000 compliance. Its small size, with a staff of about 200, simplified the development of its year 2000 strategy. In addition, DARPA was not required to review support systems because other Defense agencies provide DARPA with standard administrative systems such as accounting, payroll, and personnel support. DARPA information systems included only systems used for office automation. The overall strategy of DARPA is to replace existing computer systems with COTS systems that are year 2000 compliant by the end of FY 1998.

Identification of Systems and Interfaces

DARPA has no mission-critical systems and no external interfaces. In its January 1998 year 2000 quarterly report, DARPA reported only one non-mission-critical system, the DARPA Management Support System (DMSS). DARPA did not include research and development projects or advanced concept technology demonstration in its year 2000 assessments.

DARPA Management Support System. The DMSS is an internal system that does not interface with any external systems. The DMSS was comprised of all COTS except for the financial module, which DARPA is replacing with a COTS module that is year 2000 compliant. As of January 1998, the DMSS was in the renovation phase and will complete the implementation phase by the end of September 1998 at a cost of $80,000. The DARPA contingency plan if the DMSS system fails is to revert to a manual support process and repair or replace using COTS items. The DARPA contingency plan is not year 2000 specific, but it is part of the DARPA Continuity of Operations Plan and will satisfy any potential year 2000 problem.

In addition, DARPA identified 993 devices controlled by information technology or by microchip. The devices consist of 515 personal computers and servers, 257 communication hardware and software items, and 221 facilities and other devices. The personal computers and servers and communication hardware and software are part of the DMSS. DARPA reported that all the devices were year 2000 compliant.

Research and Development Projects and Advanced Concept Technology Demonstration Projects. DARPA did not include weapon system projects or advanced concept technology demonstration projects in its year 2000 assessments. However, DARPA officials indicated that DARPA project managers were aware of the year 2000 problem and recognized the importance of adding the year 2000 contract clause in research efforts sponsored by DARPA. DARPA did not plan on testing contractors year 2000 efforts required in the contracts because the projects are technologies as opposed to products or systems. DARPA stated that the projects were state-of-the-art by definition, and DARPA considered the year 2000 risk level to be extremely low. We reviewed two projects, the Dark Star and Global Hawk, that were scheduled for transition to the Air Force Joint Program Office in October 1998, and verified that the Joint Program Office plans to perform the year 2000 testing of these projects. Both the Under Secretary of Defense for Acquisition and Technology and the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) agree with the DARPA year 2000 approach for the weapon system projects and the advanced concept technology demonstration projects. However, formal assessments of the research efforts are required to ensure that the efforts have no year 2000 implications.

Contracting

The Acting Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) issued a policy memorandum to the Secretaries of the Military Departments and the Directors of the Defense agencies on "Acquisition of Year 2000 Compliant Information Technology (IT) and Bringing Existing IT into Compliance," December 18, 1997. The policy states that all IT acquired by the Military Departments and Defense agencies shall be year 2000 compliant. The memorandum requires the review of IT contracts and other acquisition instruments to determine whether modifications to the contracts are necessary. The memorandum also states that orders for IT

shall not be placed on a contract or other acquisition instrument unless it requires year 2000 compliance or the order itself requires year 2000 compliance.

The audit examined 11 contract efforts issued by DARPA that required IT acquisitions of about $1.2 million to accomplish the research efforts. Four contract efforts had IT acquisitions approved before the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) memorandum; five contract efforts either contained the required year 2000 clause or were modified after the audit; and two contracts did not have the year 2000 clause. The contracts without the year 2000 clause were approved shortly after issuance of the Assistant Secretary's memorandum and contained IT acquisitions valued at about $130,000.

DARPA has established a process that requires the DARPA Chief Information Officer (CIO) official to review all purchases that include IT and to ensure that they are year 2000 compliant. Therefore, all future research efforts for the acquisition of IT should be required to include the year 2000 requirement.

Other Management Comments and Audit Response to the Finding

Other Management Comments. In his comments on the finding, the Director, DARPA, stated that the audit report opened up new areas of the year 2000 computing problem that go beyond the intent of the Acting Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) memorandum of December 18, 1997. The Director stated that DARPA understood the memorandum to address IT acquired by contract and not the performance of computer hardware or software in the research projects. He said that although DARPA does not buy much hardware and software, it does have a robust program of IT and systems development. DARPA was unclear about whether those system developments should be categorized as IT purchases. The Director stated that the audit report questioned whether computer hardware, software, or firmware used with an experimental or prototype system could fail as a result of a year 2000 problem and therefore have an impact on operational systems. DARPA contracts for experimental systems, such as Advanced Technology Demonstrators, Advanced Concept Technology Demonstrators, and Section 845 prototypes, that do interact with operational systems. DARPA will review those systems to determine their year 2000 vulnerabilities and will fix any problems immediately.

Audit Response. We agree with the Director that ongoing research efforts need to be examined for a potential year 2000 impact and that the actions proposed should identify any potential problem.

Recommendation, Management Comments, and Audit Response

Revised Recommendation. As a result of DARPA management comments, we have revised Recommendation 1. to require the review of research efforts to determine whether the efforts have a potential year 2000 impact.

We recommend that the Director, Defense Advanced Research Project Agency:

1. Review research efforts to determine whether they have a potential year 2000 impact. The review should include any planned system interfaces that are necessary for the research efforts.

Management Comments. The Director, DARPA, partially concurred and stated that DARPA is not generally in the business of making IT purchases but that DARPA will address year 2000 vulnerabilities on contracted efforts of experimental and prototype systems.

2. Add, when appropriate, the year 2000 compliance language to the contracts identified in Recommendation 1.

Management Comments. The Director, DARPA, concurred and stated that DARPA will add compliance language to contracts wherever appropriate.

3. Review contracts for year 2000 compliance as part of the self-evaluation process for the management control program.

Management Comments. The Director, DARPA, concurred and stated that DARPA will conduct the reviews and actions outlined and will make it part of the management control program's self-evaluation process.

The Acting Deputy Assistant Secretary of Defense (Chief Information Officer Policy and Implementation) Comments. The Acting Deputy Assistant Secretary of Defense (CIO Policy and Implementation) provided comments and concurred with the recommendations. For the full text of the Acting Deputy Assistant Secretary's comments, see Part III.

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Part II - Additional Information

Appendix A. Audit Process

This report is one of a series of reports being issued by the Inspector General, DoD, in accordance with an informal partnership with the Chief Information Officer, DoD, to monitor DoD efforts to address the year 2000 computing challenge. For a listing of audit projects addressing this issue, see the year 2000 webpage on IGNET (http://www.ignet.gov/).

Scope

Work Performed. We reviewed and evaluated DARPA progress in resolving the year 2000 computing issue. We evaluated and compared the year 2000 efforts of DARPA with those described in the DoD Management Plan issued by the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) in April 1997. We obtained documentation including the DARPA year 2000 implementation plan, DARPA contracts, and various year 2000 correspondence and reports. We did not review contracts awarded by external organizations in support of DARPA research projects. We used the information to assess efforts related to the DMSS and DARPA IT research projects.

DoD-wide Corporate Level Government Performance and Results Act Goals. In response to the Government Performance and Results Act, the DoD has established 6 DoD-wide corporate level performance objectives and 14 goals for meeting those objectives. This report pertains to achievement of the following objective and goal:

- **Objective:** Prepare now for the uncertain future.

- **Goal:** Pursue a focused modernization effort that maintains U.S. qualitative superiority in key war-fighting capabilities. **(DoD-3)**

DoD Functional Area Reform Goals. Most major DoD functional areas have also established performance improvement reform objectives and goals. This report pertains to achievement for the following functional area objective and goal:

Information Technology Management Functional Area.

- **Objective:** Provide service that satisfy customer information needs.

- **Goal:** Upgrade technology base. **(ITM-2.3)**

General Accounting Office High Risk Area. The General Accounting Office has identified several high risk areas in the DoD. This report provides coverage of the Information Management and Technology high risk area.

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Methodology

Audit Type, Dates, and Standards. We performed this economy and efficiency audit from February through April 1998 in accordance with the auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD, and accordingly included such tests of management controls as we deemed necessary. We did not rely on computer-processed data or statistical sampling procedures to develop conclusions on this audit.

Contacts During the Audit. We visited or contacted individuals and organizations within DoD. Further details are available on request.

Management Control Program Review

DoD Directive 5010.38, "Management Control (MC) Program," August 26, 1996, requires DoD organizations to implement a comprehensive system of management controls that provides reasonable assurance that programs are operating as intended and to evaluate the adequacy of the controls.

Scope of Review of the Management Control Program. We reviewed the adequacy of the DARPA management controls over the year 2000 computer problem. Specifically, we reviewed DARPA management controls over the implementation of the DoD Management Plan issued in April 1997. DARPA did not include the year 2000 computer problem in its self-evaluation of the controls because DARPA officials considered the year 2000 computer problem to be low risk. However, DoD recognized the year 2000 issue as a material management control weakness area in the FY 1997 Annual Statement of Assurance.

Adequacy of Management Controls. DARPA management controls for the year 2000 issue were adequate.

Prior Audit Coverage

The General Accounting Office and the Inspector General, DoD, have conducted multiple reviews related to year 2000 issues. General Accounting Office reports can be accessed over the Internet at http//www.gao.gov. Inspector General, DoD, reports can be accessed over the Internet at http://www.dodig.osd.mil.

Appendix B. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
    Deputy Under Secretary of Defense (Logistics)
    Director, Defense Procurement
    Director, Defense Logistics Studies Information Exchange
Under Secretary of Defense (Comptroller)
    Deputy Chief Financial Officer
    Deputy Comptroller (Program/Budget)
Assistant Secretary of Defense (Command, Control, Communications and Intelligence)
    DoD Year 2000 Project Officer
Assistant Secretary of Defense (Public Affairs)
Director, Defense Research and Engineering

Department of the Army

Assistant Secretary of the Army (Financial Management and Comptroller)
Auditor General, Department of the Army
Chief Information Officer, Army

Department of the Navy

Assistant Secretary of the Navy (Financial Management and Comptroller)
Auditor General, Department of the Navy
Chief Information Officer, Navy

Department of the Air Force

Assistant Secretary of the Air Force (Financial Management and Comptroller)
Auditor General, Department of the Air Force
Chief Information Officer, Air Force

Other Defense Organizations

Director, Ballistic Missile Defense Organization
    Chief Information Officer, Ballistic Missile Defense Organization
Director, Defense Advanced Research Projects Agency
    Chief Information Officer, Defense Advanced Research Projects Agency
Director, Defense Commissary Agency
    Chief Information Officer, Defense Commissary Agency
Director, Defense Contract Audit Agency
    Chief Information Officer, Defense Contract Audit Agency
Director, Defense Finance and Accounting Service
    Chief Information Officer, Defense Finance and Accounting Service
Director, Defense Information Systems Agency

Other Defense Organizations (Cont'd)

Inspector General, Defense Information Systems Agency
Chief Information Officer, Defense Information Systems Agency
Director, Defense Legal Services Agency
Chief Information Officer, Defense Legal Services Agency
Director, Defense Logistics Agency
Chief Information Officer, Defense Logistics Agency
Director, Defense Security Assistance Agency
Chief Information Officer, Defense Security Assistance Agency
Director, Defense Security Service
Chief Information Officer, Defense Security Service
Director, Defense Special Weapons Agency
Chief Information Officer, Defense Special Weapons Agency
Director, National Security Agency
Inspector General, National Security Agency
Director, On-Site Inspection Agency
Chief Information Officer, On-Site Inspection Agency
Director, Washington Headquarters Services
Inspector General, Defense Intelligence Agency
Inspector General, National Imagery and Mapping Agency

Non-Defense Federal Organizations and Individuals

Chief Information Officer, General Services Administration
Office of Management and Budget
Office of Information and Regulatory Affairs
Technical Information Center, National Security and International Affairs Division,
General Accounting Office
Director, Defense Information and Financial Management Systems, Accounting and
Information Management Division, General Accounting Office

Chairman and ranking minority member of each of the following congressional
committees and subcommittees:

Senate Committee on Appropriations
Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs
Senate Special Committee on the Year 2000 Technology Problem
House Committee on Appropriations
House Subcommittee on National Security, Committee on Appropriations
House Committee on Government Reform and Oversight
House Subcommittee on Government Management, Information, and Technology,
Committee on Government Reform and Oversight
House Subcommittee on National Security, International Affairs, and Criminal
Justice, Committee on Government Reform and Oversight
House Committee on National Security

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Part III - Management Comments

Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) Comments

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
6000 DEFENSE PENTAGON
WASHINGTON, DC 20301-6000

COMMAND, CONTROL,
COMMUNICATIONS, AND
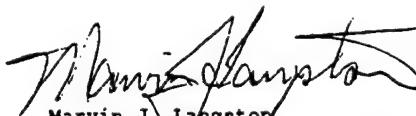INTELLIGENCE

June 18, 1998

MEMORANDUM FOR DIRECTOR, ACQUISITION MANAGEMENT DIRECTORATE, DODIG

SUBJECT: Audit Report on Year 2000 Program at the Defense
           Advanced Research Projects Agency (Project No. 8AB-9013)

        We have reviewed the draft report of your audit to determine
whether DARPA is adequately preparing its information technology
systems to resolve date-processing issues for the Year 2000
computing problem.

        We concur with all of your comments in this audit. Specific
comments with respect to each recommendation are attached.

        My point of contact for this report is Sally Brown at (703)
602-0967.

                        Marvin J. Langston
            Acting Deputy Assistant Secretary of Defense
                   (CIO Policy and Implementation)

Attachment

cc:
USD(A&T)
DDR&E
Dir., DARPA

DoDIG Recommendations:

1. DoDIG Recommendation: Review all information technology purchases on existing contracts to determine whether the information technology products are Year 2000 compliant.

OASD (C3I) Comment: Concur that DARPA's 7 of the 8 existing or proposed contracts should be reviewed and modified to determine Year 2000 compliance of information technology systems.

2. DoDIG Recommendation: Add, when appropriate, the Year 2000 compliance language to the contracts identified in Recommendation 1.

OASD (C3I) Comment: Concur: DARPA should add Year 2000 compliance language to their existing information technology contracts in accordance with governing guidance and the DoD Year 2000 Management Plan.

3. DoDIG Recommendation: Review contracts for Year 2000 compliance as part of the management control program self-evaluation.

OASD (C3I) Comment: Concur: Current DARPA management control procedures for contracting are not adequate to ensure that the procurement of Y2K compliant information technology. DARPA's management control procedures must include routine contract language requiring Y2K compliance and procedures for independent verification of such compliance.

Defense Advanced Research Projects Agency Comments

DEFENSE ADVANCED RESEARCH PROJECTS AGENCY
3701 NORTH FAIRFAX DRIVE
ARLINGTON, VA 22203-1714

JUN 25 1998

MEMORANDUM FOR ASSISTANT INSPECTOR GENERAL FOR AUDITING

SUBJECT: Audit Report on Year 2000 Program at the Defense Advanced Research Projects Agency (Project No. 8AB-9013)

This is in response to Mr. Thomas Gimble's memorandum of May 12, 1998, subject as above, requesting agency review and comment on the draft report by June 12, 1998. An extension of the due date was provided orally by Mr. Roger Florence, Audit Project Manager.

The comments of the Defense Advanced Research Projects Agency management are attached.

F. L. Fernandez
Director

Attachment:
As stated

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Agency Response to DoDIG Audit of DARPA
(Project No. 8AB-9013)

We think the findings and recommendations of the draft audit report open up new areas of inquiry about the Year 2000 (Y2K) computing problem that go well beyond the intent and scope of the memorandum of December 18, 1998, issued by the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) on "Acquisition of Year 2000 (Y2K) Compliant Information Technology (IT) and Bringing Existing IT into Compliance," (hereafter referred to as the "Valletta memo"). We believe the Valletta memo primarily addresses operational IT within agencies and IT that is acquired by contract, where IT is the subject of those contracts. We did not interpret the Valletta memo as pertaining to every contract that uses computer hardware or software in the performance of the project.

DARPA does not really acquire much IT in the sense of buying computer hardware or software systems. DARPA has a robust program of information technology and systems development, but it is not clear that these contracted efforts should properly be categorized as "information technology purchases." We believe the majority of DARPA contracted efforts fall into a gray area with respect to the IT definition and pose very little operational vulnerability from a Y2K standpoint.

Despite the assertion by the DoDIG on page 4 of the draft report, DARPA did comply with Y2K guidance from the Office of the Secretary of Defense. DARPA reviewed the Y2K compliance of its internal IT systems. Those systems were given a clean bill of health by the audit. DARPA conducted a case by case review of contracts based upon records of computer-related purchases maintained by the information resources directorate. When the draft audit report criticized that review, representatives of the DARPA directorates for information resources and contracts management met with the DoDIG audit project manager to resolve most of the IG's concerns about individual contracts. The only remaining area of contention was the definitional disagreement mentioned above.

The inquiries of the DoDIG during the audit, however, opened up a whole new question about Y2K that could potentially affect DARPA. That is, whether computer hardware, software or firmware utilized within an experimental or prototype system could fail, thereby having an impact upon an operational system. DARPA does contract for a small number of experimental systems, such as Advanced Technology Demonstrations (ATDs), Advanced Concept Technology Demonstrations (ACTDs), and Section 845 prototypes, that do interact with operational systems.

The Director, DARPA, is committed to going beyond the confines of the audit to look into Y2K vulnerabilities on these types of contracted efforts and fixing any problems immediately. The DARPA plan of action is outlined below in the responses to the specific recommendations.

Final Report
<u>Reference</u>

Revised

Recommendations for Corrective Action

1. Review all information technology purchases on existing contracts to determine whether the information technology products are Year 2000 compliant.

Response: Concur in part. As stated above, DARPA is not generally in the business of making "information technology purchases." Consequently, the recommended review would identify many contracts where computer assets were acquired by contractors to perform research and development projects, but where there would be little chance of Y2K failure since the assets are commercial off-the-shelf. Even if a Y2K failure did occur, there would be virtually no adverse consequences under these types of research efforts.

As an alternative to this recommendation, the DARPA plan for addressing the agency's potential Y2K vulnerabilities on contracted efforts is as follows:

Plan of Action for Contracted Efforts

I. Absolute Assurance Compliance Review

This is a review of every action awarded by the *Contracts Management Directorate* (CMD) since the Valletta memo in an attempt to provide absolute assurance about Y2K compliance. A CMD task force has been created and the effort is underway.

Planned Completion Date: July 31, 1998

II. Review of Experimental and Prototype Systems

A. Sizing the Problem – A data call has been issued to Assistant Directors for Program Management in each technical office to identify contracted efforts that potentially could encounter a Y2K failure that could affect operational systems. The contractors for such efforts will be tasked to examine the Y2K situation and estimate the cost of appropriate remedial measures.

B. Prioritizing the Problem – DARPA officials will assess the vulnerabilities and prioritize the projects and contracts for remedial action. They will locate funding and resources, as applicable.

C. Fixing the Problem – Contract modifications will be negotiated and contract certifications obtained, as appropriate. Contractors will perform remedial action. Activities will be documented.

Planned Completion Date: September 30, 1998

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2. Add when appropriate the Year 2000 compliance language to the contracts identified in Recommendation 1.

Response: Concur. DARPA will conduct the reviews outlined in the response above and add compliance language to contracts wherever appropriate.

3. Review contracts for Year 2000 compliance as part of the management control program self-evaluation.

Response: Concur. DARPA will conduct the reviews and actions outlined in the response to Recommendation 1 above and make it a part of the management control program self-evaluation.

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Audit Team Members

The Acquisition Management Directorate, Office of the Assistant Inspector General for Auditing, DoD, produced this report.

Thomas F. Gimble
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Raymond A. Spencer
Roger H. Florence
Rudolf Noordhuizen

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